

## CLAIMS

What is claimed is:

1. A system for indicating and determining a master unit from a plurality of logic units, comprising:

5 a first logic unit configured to output a first obey signal and receive a first input signal;

a second logic unit configured to output a second obey signal and receive a second input signal, wherein at least one of the first and second logic units includes logic to output its respective obey signal as a time varying signal and wherein at least one of  
10 the first and second logic units includes logic to control a phase relationship of the second obey signal relative to the first obey signal in response to at least one of the first and second input signals; and

a mastership determination logic unit having logic to determine that the first logic unit is the master unit when only the first obey signal is time varying and to  
15 determine that the second logic unit is the master unit when only the second obey signal is time varying,

wherein the mastership determination logic unit further including logic to determine that the first logic unit is the master unit when the first and second obey signals are time varying in-phase and to determine that the second logic unit is the  
20 master unit when the first and second obey signals are time varying out-of-phase,

2. The system of claim 1 wherein each of the first and second obey signals in a redundant trace signal, and wherein the first and second obey signals and their redundant trace signals are analyzed by the mastership determination logic unit to a fault when it occurs.

5

3. A system for indicating and determining a master unit from a plurality of logic units, comprising:

a first logic unit configured to output a first obey signal;

a second logic unit configured to output a second obey signal, wherein the first obey signal and the second obey signal are clocked signals; and

a mastership determination logic unit coupled to the first and second obey signals, the mastership resolution determination unit configured to monitor the first and second obey signals,

wherein the mastership determination logic unit is further configured to indicate whether the first or second logic unit is the master unit based on the first and second obey signals.

4. The system of claim 3 wherein the first obey signal includes a redundant trace signal, wherein the second obey signal includes a redundant trace signal, and wherein the

first and second obey signals and their redundant trace signals are analyzed by the mastership determination logic unit to detect a fault when it occurs.

5. A system for indicating and determining a master unit from a plurality of logic units, comprising:

a first logic unit configured to output a first obey signal and receive a first input signal;

a second logic unit configured to output a second obey signal and receive a second input signal, wherein a phase relationship of the second obey signal relative to the first obey signal is controllable by the first and second input signals; and

a mastership determination logic unit in electrical communication with the first and second obey signals, the mastership determination logic unit is further configured to monitor the phase relationship of the first and second obey signals to determine whether the first or second logic units is the master unit based on the phase relationship of the signals.

6. The system of claim 5 wherein the first obey signal includes a redundant trace signal, wherein the second obey signal includes a redundant trace signal, and wherein the first and second obey signals and their redundant trace signals are analyzed by the mastership determination logic unit to detect a fault when it occurs.

7. A method for indicating and determining a master unit from a plurality of logic units, comprising:

determining that a first logic unit is the master unit when only a first obey signal  
5 output by the first logic is time varying;

determining that a second logic unit is the master unit when only a second obey signal output by the second logic is time varying;

determining that the first logic unit is the master unit when a first signal received by the first logic unit and a second signals received by the second logic unit are time  
10 varying in-phase; and

determining that the second logic unit is the master unit when the first and second signals are time varying out-of-phase.

8. The method of claim 7 further comprising:

15 providing a redundant signal to each of the first and second obey signals; and

analyzing the first and second obey signals and their redundant signals to identify a fault when it occurs thereon.